A. **Title**: Application for Permit for Scientific Purposes under the Endangered Species Act of 1973.

Project Name
Statewide monitoring efforts to investigate the occurrence and concentrations of toxic contaminants in fish tissue.

B. **Species**: List all species and Evolutionarily Significant Units (ESUs) and/or populations for which you request take authority.

Lower Columbia River Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock

Upper Columbia River Spring Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock

Puget Sound Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock

Snake River Fall Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock

Snake River Spring/Summer Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock

Columbia River Chum (*Oncorhynchus keta*) wild and hatchery stock

Hood Canal Summer Chum (*Oncorhynchus keta*) wild and hatchery stock

Lower Columbia River Coho (*Oncorhynchus Kisutch*) wild and hatchery stock

Ozette Lake Sockeye (*Oncorhynchus nerka*) wild and hatchery stock

Snake River Sockeye (*Oncorhynchus nerka*) wild and hatchery stock

Lower Columbia River Steelhead (*Oncorhynchus mykiss*) wild and hatchery stock

Middle Columbia River Steelhead (*Oncorhynchus mykiss*) wild and hatchery stock

Upper Columbia River Spring Steelhead (*Oncorhynchus mykiss*) wild and hatchery stock

Snake River Basin Steelhead (*Oncorhynchus mykiss*) wild and hatchery stock

Puget Sound Steelhead (*Oncorhynchus mykiss*) wild and hatchery stock

C. **Date of Permit Application**: Date you are sending the application. If you submit subsequent versions of the application (after you receive guidance from NMFS) update the dates to reflect the date the updated version is sent.

July 17, 2006

D. **Applicant Identity**: The applicant is the individual and/or agency responsible for ensuring compliance with permit conditions, and may represent a group of individuals actually performing the activities (e.g., employees, partners, agents, and/or contractors). Please include the following information about the permit applicant:

1. Applicant's name and position title
2. Institution or agency name
3. Mailing address
4. Telephone number
5. Fax number
6. Email address

If NMFS should be coordinating with a contact person different from the applicant, also include the same information (1-6 above) for the principal contact. Attach résumés, if any, at the end of the application or provide them in a separate document.

Keith Seiders, WSTMP Coordinator
Washington State Department of Ecology
Environmental Assessment Program
300 Desmond Drive, POB 47710
Olympia, WA 98504-7710

Phone: 360-407-6689
Fax: 360-407-6884
Email: kese461@ecy .wa.gov

Patti Sandvik, principal contact
Washington State Department of Ecology
Environmental Assessment Program
300 Desmond Drive, POB 47710
Olympia, WA 98504-7710

Phone: 360-407-7198
Fax: 360-407-6884
Email: psan461@ecy .wa.gov

E. **Information on Personnel, Cooperators, and Sponsors**: If the same person or entity will hold several roles, you may state their address information once and refer back to it.

1. If the applicant will not be the sole person conducting the proposed activities, provide the names, email addresses, phone numbers, and résumés for each Principal Investigator and Field Supervisor. A Principal Investigator is ultimately responsible for the project and compliance with the permit conditions. A Field Supervisor (who may also be the Principal Investigator), is anyone who supervises or carries out the activities in the field without supervision, and will also be responsible for compliance with the permit conditions. Attach résumés, if any, at the end of the application or provide them in a separate document.

Field Supervisors: (All with the Washington State Department of Ecology) (See Attachment 1 for résumés)

- Keith R. Seiders, 360-407-6889. Email: kese461@ecy.wa.gov.
- Arthur F. Johnson, 360-407-6766. Email: arjo461@ecy.wa.gov.
- Dale E. Norton, 360-407-6765. Email: dnor461@ecy.wa.gov.
- Randy S. Coots, 360-407-6690. Email: rcoo461@ecy.wa.gov.
- Paul D. Anderson, 360-407-7548. Email: pand461@ecy.wa.gov.
- Kristin Kinney, 360-407-7168. Email: kkin461@ecy.wa.gov.
- Brandee Era-Miller, 360-407-6771. Email: bera461@ecy.wa.gov.
- Casey Deligeannis, 360-407-7395. Email: cdel461@ecy.wa.gov.
- Patti Sandvik, 360-407-7198. Email: psan461@ecy.wa.gov.

2. To the extent possible, provide a list of field personnel.

Field Personnel: (All with the Washington State Department of Ecology) (See Attachment 1 for résumés)

- Chris Burke, 360-407-6139. Email: cbur461@ecy.wa.gov.
- Nigel Blakley, 360-407-6770. Email: nbla461@ecy.wa.gov.
- Steven H. Golding, 360-407-6701. Email: sgol461@ecy.wa.gov.
- Brandi Lubliner, 360-407-7140. Email: brwa461@ecy.wa.gov.
- Daniel J. Dugger, 509-454-4183. Email: ddug461@ecy.wa.gov.
- Darren Alkire, 360-407-6060. Email: dalk461@ecy.wa.gov.
- Carolyn J. Lee, 360-407-6430. Email: clee461@ecy.wa.gov.
- Thomas H. Gries, 360-407-6327. Email: tgri461@ecy.wa.gov.
- Brenda Nipp, 208-818-5448. Email: bnip461@ecy.wa.gov.
- Scott Tarbutton, 509-329-3453. Email: scta461@ecy.wa.gov.

3. Provide the name, title, agency, phone number, and any other appropriate contact information for all sponsors, cooperating institutions, etc.

Informal cooperation and coordination with the Indian Tribes, United States Fish and Wildlife Service, Washington State Department of Fish and Wildlife and other federal, state and local entities have occurred and is expected to continue.

4. If the proposed activities will be conducted by a contractor, provide a statement that a qualified member of your staff (include name(s) and qualifications) will supervise or observe the taking. Include a copy of the proposed contract or a letter from the contractor indicating agreement to operate under any and all permit conditions, should a permit be granted.

No contractors will be used during field activities of this project.

5. Provide a description of the arrangements for the disposition of any tissue samples, dead specimens, or other remains. If you will not retain samples, state that samples will be returned to their capture site (see section H.2.). If you are going to retain tissue samples (including whole fish), either in a museum or other institution for the continued benefit to science, include information on where the samples will be stored, transferred, and how/when/where they will be disposed. Include the list of researchers, laboratories, museums, and/or institutional collections that would receive these tissue samples or specimens. Please include name, address, contact, and phone number for each.

ESA-listed species will not be targeted for collection. Other fish specimens collected during this study will be retained and processed by the Department of Ecology for laboratory analysis of tissue for toxic contaminants. Non-ESA-listed tissue samples may be archived for up to one year after collection in the event additional chemical analyses are desired.

Unintentional mortalities of listed species may be retained and kept frozen at Ecology Headquarters: NOAA will then be contacted about the potential use of such specimens in other research.

Northwest Fisheries Science Center
2725 Montlake Blvd. East
Seattle, WA 98112-2097
PHONE: 206-860-3200
FAX: 206-860-3217

6. For transport and long-term holding of listed species (see Section I), provide the qualifications and experience of all staff responsible for care without supervision, including a written certification from a licensed veterinarian knowledgeable about the requested species (or similar species), or from a recognized expert on the

species (or similar species) that he/she has personally reviewed the criteria for transporting and maintaining the animal(s) and that in his/her opinion they are adequate to provide for the well-being of the animal. Include the name, address, email, and phone number of this veterinarian, consulting expert, or equivalent who will be available during the proposed activities.

Listed species will not be held or transported (except unintentional mortalities, see Part 5 above). If inadvertently captured, listed species will be immediately released.

F. **Project Description, Purpose, and Significance**: Describe the purpose of your study or project. If available, attach a copy of the formal project proposal or contract, including the contract number, to your application. You may reference the appropriate section of the proposal/contract in response to a particular question.

1. A justification of the objective(s): motivation, history, goals, etc. State how the listed species will benefit from the proposed activities. Begin with a brief description of the purpose of the research (30 words or less). *For example: The purposes of the research are to assess watershed conditions and factors limiting salmonid health and production, and evaluate watershed health under the Northwest Forest Plan.*

The purpose of the research is to investigate the occurrence and concentrations of toxic contaminants in edible fish tissue.

Past monitoring efforts in Washington State have detected toxic contaminants in surface water, sediment, and aquatic animal tissues. In many cases, levels of contaminants have been high enough to threaten the health of humans and wildlife. The accumulation of these chemicals can cause a variety of health effects on humans and wildlife such as reproductive abnormalities, neurological problems, and behavioral changes.

For many areas of Washington, information is lacking about the levels of toxic contamination in fish and surface water. The Department of Ecology has undertaken a monitoring effort to address this lack of information: the Washington State Toxics Monitoring Program - Exploratory Monitoring (WSTMP). The goal of the program is to investigate the occurrence and concentrations of toxic contaminants in edible fish tissue and surface waters in Washington where the potential for contamination exists yet recent data are absent. Approximately 15 to 20 different sites will be sampled for fish tissue each year of this long-term program.

Details about this monitoring effort can be found in the document: *Quality Assurance Project Plan: Washington State Toxics Monitoring Program, Exploratory Monitoring of Toxic Contaminants in Edible Fish Tissue and Freshwater Environments of Washington (*Ecology publication number 02-03-065 at http://www.ecy.wa.gov/biblio/0203065.html).
Please see www.ecy.wa.gov/programs/eap/toxics/index.html for more information about monitoring toxic contaminants in Washington.

Benefits to listed species are likely more indirect than direct. For example, basic knowledge will be gained about the levels of toxic contaminants present in fish which share the same habitat and range of the listed species. Other potential benefits of this monitoring program to listed species may be realized through pollution control actions that could occur as a result of this program's findings. Pollution control actions might take the form of habitat improvement and/or the reduction or removal of sources of toxic contaminants.

2. A statement of whether or not the proposed project or program responds directly or indirectly to a recommendation or requirement of a Federal agency (Include citations if applicable). Identify any secured or proposed Federal funding source(s) for the proposed activities, including names, addresses, and phone numbers of the sponsors, cooperating institutions, etc.;

The proposed project responds in part to the state's responsibility for protecting residents from the health risks associated with the consumption of contaminated non-commercially caught fish. More specifically, the proposed project responds to requirements of the federal Clean Water Act of 1972. Section 303(d) of the Clean Water Act requires states to identify its polluted waterbodies and submit this list to EPA every four years. The list, known as the 303(d) List, identifies the impaired waterbodies and their associated pollutants and can be accessed at http://www.ecy.wa.gov/programs/wq/303d/index.html. Polluted waters are those that fail to meet state water quality standards. The water quality standards are the criteria to ensure our waters can be used for beneficial purposes we all enjoy, from fishing, swimming, boating, and drinking to industrial and agricultural purposes, and fish habitat. Washington currently has around 250 individual Category 5 waterbodies on the 303(d) list because contaminants in fish tissue exceed standards.

The law requires that states use the list to set priorities for cleaning up polluted waters and to establish a Total Maximum Daily Load (TMDL) for listed waters. A TMDL, or water cleanup plan, entails an analysis of how much pollution a waterbody can assimilate and still remain healthy for its intended uses. The cleanup plan also includes recommendations for controlling the pollution and a monitoring plan to test the plan's effectiveness. Several TMDLs are underway in

Washington to address toxic contaminants in fish tissue in the following watersheds: Spokane, Okanogan, Walla Walla, Yakima, and Lake Chelan.

The proposed project will help determine whether selected waters of the state meet state water quality standards for toxic contaminants in fish. The project will also provide information about risks to humans and wildlife from the consumption of fish.

Funding for the Washington State Department of Ecology's monitoring program is primarily through the State Toxics Account. Additionally, the project cooperates informally with federal or state agencies as stated in Section E 3 and has received funding for collecting fish under the Environmental Protection Agency's program studying chemical residues in lake fish tissue as described in Section F 4. For further information about funding sources, please contact Dale Norton, Department of Ecology, phone 360-407-6765, email dnor461@ecy.wa.gov.

3. A statement of whether or not the proposed project or program has broader significance than the individual project's goals, or is part of a larger scale research management or restoration plan (Include citations if applicable);

The broader significance of this program lies in the value and applicability of information gathered about toxic contaminants in Washington's aquatic environments and fish. Results from the WSTMP efforts should directly or indirectly benefit other state and federal programs such as those listed in the response to question 4 below.

For example, fish tissue contaminant data from Ecology's WSTMP effort may eventually be submitted to the National Fish Tissue Residue Data Depository (NFTRDR) established by EPA (EPA, 2000). The NFTRDR is housed within the National Listing of Fish and Wildlife Advisories (NLFWA) database. The purpose of the data repository is to facilitate the exchange of fish contaminant monitoring data nationwide by improving the comparability and integrity of state data, encourage greater cooperation among regional and state fish advisory programs, and assist states in their fish tissue data collection efforts by providing technical assistance.

Citation

EPA, 2000. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories. Volume 1: Fish Sampling and Analysis. Third Edition. November 2000. EPA-823-B-00-007. US EPA Office of Water, Washington D.C.

4. A description of any relationships or similarities of the proposed activities to other proposed or ongoing projects and programs, and whether the potential exists to cooperate and coordinate with other similar studies or activities. (Include citations if applicable); and

There are several programs that gather information about pesticides and toxic contaminants in Washington's freshwaters environments and freshwater fish tissue. Ecology has, and will continue to, cooperate and coordinate with other programs to the extent that project goals and resources allow.

- The EPA's National Study of Chemical Residues in Lake Fish Tissue (EPA, 2000) is a similar program of nationwide significance. Ecology's cooperative role in this program has been to collect fish from EPA-selected lakes each year since 1999. Ecology collected fish from the program's remaining selected lakes in 2004. Results from this EPA study will be used for the WSTMP since the programs are similar in many respects.

- Other EPA and USGS studies produce data that can be used by the WSTMP. These studies include EPA's fish contaminant studies in the Columbia River (EPA, 1996) and Lake Roosevelt, and USGS's NAWQA programs in the Puget Sound, Yakima River, and Central Columbia River Plateau basins (http://water.usgs.gov/nawqa/). As with EPA's Lake Fish Tissue study above, the incorporation of data from these and other programs effectively increase the geographic coverage of the WSTMP and minimize redundant sampling.

- Information from Ecology's WSTMP monitoring program may be of benefit to the efforts of the Washington Sate Pesticide/ESA Task Force, particularly in providing information on pesticide concentrations in surface water and fish tissue throughout the state. The Task Force's plan: "A Process for Evaluating Pesticides in Washington State Surface Waters for Potential Impacts to Salmonids" describes the need for various monitoring efforts to address links between pesticide use and impacts on ESA-listed salmonids (Washington State Pesticide/ESA Task Force, 2001).

- Ecology's WSTMP monitoring program provides credible data to the Water Quality Program's "Assessment of Water Quality for the Clean Water Act Sections 303(d) and 305 (b) Integrated Report" (Washington State Department of Ecology 2006). The water quality listing of the state's water can then be determined and any impaired waters that exceed the water quality standard criteria can be placed on the 303(d) list and submitted to EPA as discussed in number 2 of this Section. These waters require preparation of water quality improvement projects, (TMDLs) in accordance with the Clean Water Act.

- Columbia River Toxics Reduction Strategy- Federal and state agencies along with a number of tribes and the lower Columbia Estuary Partnership have been working on a toxics reduction strategy for the Columbia River System. Proposed monitoring under this effort includes collection of resident fish species as a coordinated effort between the various groups working in the Columbia River system (Washington State Department of Ecology, 2006b). The information generated will be used for a variety of purposes including 303(d) assessments, evaluation of the need for fish consumption advisories, and ecosystem health status.
- The Washington Department of Fish and Wildlife (WDFW) collect fish for various fishery management programs. Where possible, this project will collaborate with WDFW in the collection of fish. That is, WDFW staff may be able to collect fish for this program at the same time they are assessing fish populations for their management programs thus avoiding redundant fishing efforts.

Citations

EPA, 2000. *Field Sampling Plan for the National Study of Chemical Residues in Lake Fish Tissue.* USEPA Office of Water and Office of Science and Technology, July 2000. Prepared by Tetra Tech, Inc, Owings Mills MD for Leanne Stahl, National Study Manager, USEPA Office of Science and Technology, Washington D.C.

EPA, 1996. *Quality Assurance Project Plan: Assessment of Chemical Contaminants in Fish Consumed by Four Native American Tribes in the Columbia River Basin.* Revision 6.0, December 16, 1996. U.S. Environmental Protection Agency Region 10, Office of Environmental Assessment.

Washington State Department of Ecology, 2006. *Assessment of Water Quality for the Clean Water Act Sections 303(d) and 305 (b) Integrated Report*. Publication: Water Quality Policy 1-11.
http://www.ecy.wa.gov/programs/wq/303d/2006/policy1-11_rev.html
Accessed June 2006.

Washington State Department of Ecology, 2006b. *Identification of Sources of Toxics to the Middle Columbia River Using Passive Samplers and Resident Fish Tissue Survey to Assess Human Health Implication in the Mainstem Columbia River; Draft monitoring plan prepared for the Columbia River Toxics Workgroup*.

Washington State Pesticide/ESA Task Force, 2001. *A Process for Evaluating Pesticides in Washington State Surface Waters for Potential Impacts to Salmonids*. By: Washington Departments of Agriculture, Natural Resources, Fish and Wildlife, and Ecology; U.S. Fish

and Wildlife Service – Western Washington Office; National Marine Fisheries Service – Northwest Region; and the U.S. Environmental Protection Agency – Region 10. September 2001.

5. A justification for using listed species in the study or activities, and a discussion of possible alternatives to using listed species.

Species listed under the ESA are not targeted for collection or use during this program. This program will collect fish from areas where ESA-listed species may be present. Should they be encountered, their capture will be avoided; if captured inadvertently, they will be immediately released.

G. **Project Methodology**: Provide a detailed description of the project, or program, in which the listed species is to be used, including:

1. The proposed duration of the project or program, including start and end dates. Provide the date the project is scheduled to start. Be realistic. Use a start date, whenever possible, that is at least six months after the application is submitted. Use an end date that covers all possible scenarios, or up to five years from the start date. If the project or program will continue into the foreseeable future, provide the rationale for the extended time frame. Provide times during the year that specific activities will occur. Be specific if multiple activities are proposed (e.g., spawning surveys from October to December; juvenile trapping from April to June).

Ecology is committed to establishing and maintaining a fish tissue contaminant monitoring program. This program began in the fall of 2001 and is expected to continue indefinitely. The time period for this permit is for five years, from January 1, 2007 until December 31, 2011. Multiple sites will be sampled for fish tissue each year of this long-term program as stated in Section F 1. ESA-listed species are not targeted for capture during this program and so will not be used as part of this program. The time of sampling may vary throughout the year (January – December) but will predominantly take place in the fall.

2. A discussion of the procedures and techniques which will be used during the project. Begin with a BRIEF description of the capture methods (seine, backpack electrofishing, etc.) and a brief description of any "intrusive methods" (anesthetic, tagging, marking, tissue samples, etc.). *For example: Listed fish will be captured (using boat electrofishing, fyke nets, and minnow traps), anesthetized, measured, checked for tags, marked, sampled for stomach content, and released.* Follow with more specific descriptions that will allow us to assess the activities. The discussion should include, at a minimum:

a. Method(s) of capture and of release;

Target fish (non-ESA listed species) will be captured by the use of nets, electro-fishing and/or angling (line) fishing. Several net types may be used to capture fish: the type varying with the sampling environment and target species and size. Net types to be used include gill nets, fyke nets, tangle nets and traps. Net mesh sizes will be designed to capture adults of target species. The deployment, tending, and retrieval of nets will apply practices designed to minimize injury to captured fish. Gill nets and tangle nets will be picked at minimum every six hours during deployment. Target species will be retained while non-target species will be released. Net types and netting practices will adhere to guidelines issued by NMFS.

Electrofishing will be performed using either a Smith-Root 16' electrofishing boat with an isolated cathode array or using a Smith-Root LR-24 battery powered backpack electrofisher. If captured, non-target fish may be held in an aerated live well to aid their recovery. Electrofishing efforts will adhere to NMFS and WDFW guidelines in order to minimize injury to fish and maximize electrofishing efficiency.

Line fishing will be done with hook and line following DFW regulations and fishing permit requirements. Target species will be retained while non-target species will be released.

b. The sampling schedule, including locations and dates if available. Be as specific as possible. Locations should be listed from general to most specific, including bodies of water, rivers, tributaries, streams or creeks, and a geographical descriptor (e.g., Columbia River, Snake River, Imnaha River, River Mile 42). Include latitude/longitude coordinates, if possible. Include 4th field hydrologic units (HUCs) whenever possible.

All waters in Washington State.

c. A description of any tags, including the attachment method, location, and special handling/holding associated with the tagging;

No tags will be used during this program.

d. A description of type and dosage of any drugs to be used, purpose of use, and method of application;

No drugs will be used during this program.

e. Temporary holding time prior to release of the individual(s) and the manner in which they will be detained. For transport and long-term holding, please fill out section I *Transportation and Holding*; and

Listed species, if inadvertently captured, will be released immediately or held temporarily in an aerated live well to aid recovery. Otherwise, listed species will not be held or transported.

f. Number and types of samples to be taken from each individual, including sampling protocol.

Listed species will not be sampled. If listed species are inadvertently captured, they will be released immediately.

3. A discussion of possible alternatives to using the proposed methods. If applicable, you should try to anticipate alternative scenarios due to circumstances such as changes in environmental conditions, annual variations in species abundance, necessary changes in proposed procedures, etc. Such scenarios should be addressed in the *Description and Estimates of Take* section below if they affect the nature or amount of potential take of listed species. This planning may avoid the potentially lengthy process of modifying the permit.

Species listed under the ESA are not targeted for collection or use during this program and will be released immediately if inadvertently captured as stated in Section F 5. Alternative scenarios include cooperation and coordination with other federal, tribal, state, and local agencies for the collection of fish and/or tissue samples to effectively increase the geographic coverage of the WSTMP, maximizes efficiency and minimizes redundant sampling as stated in Section E 3 and described in number 4 of this Section.

4. A discussion of the potential for injury or mortality to the species involved, and the steps that will be taken to minimize adverse effects and to ensure that the species will be taken in a humane manner.

The potential for injury or mortality to listed species by electrofishing should be minimized by the timing and techniques to be used. When possible, fish collection efforts will occur when adults are expected to be absent or present in low numbers from the waterbody being sampled. Electrofishing will begin with straight DC current at low voltage. Should these settings be ineffective for attracting fish, pulsed DC at low frequencies may be used, and voltages increased to the minimum needed to capture adult fish of target species. Mesh sizes of nets should be large enough (> 1") to allow juveniles to pass through

unharmed. Gill net soak time will be retained to 6-hours to allow release of unintentional adult listed species as determined in Section K 2 c.

H. **Description and Estimates of Take**: Issued permits define a specific number of individuals of each species that can be taken under the approved study or project. You must provide sufficient detail in the attached table (see last page) for NMFS to determine the species, population group, and estimated number of individuals to be taken by each activity. You should also describe the specific life stage, and origin, (and sex, if appropriate) of the listed species targeted. Take into account alternative scenarios identified above in the *Project Description, Purpose, and Significance* section.

Provide a separate table for each project, activity, or location, if appropriate. Attach the table at the end of the application. In addition, include:

1. Describe the recent status and trends of each ESU/species proposed to be taken (include citations where possible). NMFS already possesses information at the ESU level (see various NMFS web sites), so there is no need to repeat it in your application. We are seeking new data here—specifically, status and trend data on any distinct populations the proposed action is likely to affect. Such information will help us evaluate the probable impacts of the proposed research.

ESA-listed species are not targeted for collection during this program. No abundance, status, or trends data for listed species will be collected during this project. The purpose of this project is only to investigate the occurrence and concentrations of toxic contaminants in non-listed fish.

2. Provide a justification for all potential mortalities by take category. You should explain how you determined the numbers of listed species that would be killed, either intentionally (direct mortality, lethal take) or unintentionally (indirect mortality). You may reference section G.4. in explaining mortality rates.

Mortality of listed species would be unintentional and a consequence of capture and handling by electrofishing, netting, and line fishing. We expect adults to be more at risk than juveniles because electrofishing and netting activities will target adults of non-listed species. Net mesh size (greater than 1.0 inches mesh) would allow juveniles to pass through while electrofishing settings will have greater effect on adults due to their larger surface area.

We estimate mortality of listed species/ESUs to be up to one percent of the number encountered.

3. Provide details on how all take estimates, including mortalities, were derived. Include citations when applicable.

Estimates of take and mortality were derived from discussions with staff who have conducted electrofishing and netting activities. The estimates represent a collective opinion based on our experiences with collecting adult fish for fish tissue contaminant studies. Information from direct measurements of species/life stage/sex and mortality is not available from our past studies since such information was not a focus of the studies and thus was not collected.

4. Include a statement as to whether or not any USFWS listed species would be affected. If any would be, include which species and DPS' and the authority you have to take those species (permit, consultation, agreement).

The USFWS listed the Bull Trout (Salvelinus confluentus) as "Threatened" in Washington waters. Ecology applied for, and received a permit (#TE-058381) and amendments) from USFWS which authorizes the research activities described in this permit application.

I. Transportation and Holding

Listed species will not be transported or held for the long term in any manner. If inadvertently captured alive, listed species will be released immediately.

1. **Transportation of a Listed Species**: Provide a description of how any live individuals taken from the capture site or other facility (including rescue and relocation activities) will be transported including:

   a. Mode of transportation and name of transportation company, if applicable.

   b. Length of time in transit for the transfer of the individual(s) from the capture site to the holding facility or to the target location.

   c. Length of time in transit for any planned future move/transfer of the individual(s).

   d. The qualifications of the common carrier or agent used for transportation of the individual(s).

   e. A description of the tank, container, or other devices used both to hold the individual(s) at the capture site and during transportation.

f. Special care before, during and after transportation (e.g., use of oxygen, temperature control, anesthetics, antibiotics, etc.)

Not Applicable

2. **Holding of a Listed Species**: Describe the plan for care and maintenance of any live individuals, including a complete description of the facilities where any such individuals will be maintained including:

a. The dimensions of the tank(s) or other holding facilities and the number of individuals, by species, life stage, and origin, to be held in each.

b. The water supply, amount, and quality, including controls on temperature and dissolved oxygen.

c. The amount and type of diet used for all individuals, and food storage.

d. Sanitation practices used.

Not Applicable

3. **Emergency contingencies**: Identify emergency contingencies- e.g., backup life support systems, alarm systems, redundant water and oxygen supply, release or destroy decision chains, etc.

Not Applicable

J. **Cooperative Breeding Program:** You MUST include a statement of willingness to participate in a cooperative breeding program and to maintain or contribute data to a breeding program, if such action is requested.

The Department of Ecology will participate and contribute data to a cooperative breeding program to the extent that such effort is within our expertise and resource commitments.

K. **Previous or Concurrent Activities Involving Listed Species**:

1. Identify all previous permits where you were the permit holder or primary investigator working with federally-listed species; identify which species.

Section 10(a)(1)(A) Permit Number 1386. Issued by NOAA on October 9, 2002 for the following species:

- Upper Columbia River Spring Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock

- Lower Columbia River Chinook (*Oncorhynchus tshawytscha*)
- Puget Sound Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock
- Snake River Fall Chinook (*Oncorhynchus tshawytscha*)
- Snake River Spring/Summer Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock
- Columbia River Chum (*Oncorhynchus keta*)
- Ozette Lake Sockeye (*Oncorhynchus nerka*)
- Upper Columbia River Spring Steelhead (*Oncorhynchus mykiss*) wild and hatchery stock
- Lower Columbia River Steelhead (*Oncorhynchus mykiss*)
- Middle Columbia River Steelhead (*Oncorhynchus mykiss*)
- Snake River Basin Steelhead (*Oncorhynchus mykiss*)
- Hood Canal Summer Chum (*Oncorhynchus keta*)

Section 10(a)(1)(A) Permit Number 1386 Modification 1, issued by NOAA on February 3, 2006 for the following species:

- Upper Columbia River Spring Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock
- Lower Columbia River Chinook (*Oncorhynchus tshawytscha*)
- Puget Sound Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock
- Snake River Fall Chinook (*Oncorhynchus tshawytscha*)
- Snake River Spring/Summer Chinook (*Oncorhynchus tshawytscha*) wild and hatchery stock
- Columbia River Chum (*Oncorhynchus keta*)
- Ozette Lake Sockeye (*Oncorhynchus nerka*)
- Upper Columbia River Spring Steelhead (*Oncorhynchus mykiss*) wild and hatchery stock
- Lower Columbia River Steelhead (*Oncorhynchus mykiss*)
- Middle Columbia River Steelhead (*Oncorhynchus mykiss*)
- Snake River Basin Steelhead (*Oncorhynchus mykiss*)
- Hood Canal Summer Chum (*Oncorhynchus keta*)
- Lower Columbia River Coho Salmon (*Oncorhynchus Kisutch*)

Section 10(a)(1)(A) Permit Number TE-058381 and amendments, issued by USFWS for the Bull Trout (Salvelinus confluentus):

Permit Number TE-058381-0. Issued on 8/12/02.
Permit Number TE-058381-1. Issued on 7/7/03.
Permit Number TE-058381-2. Issued on 9/15/03.
Permit Number TE-058381-3. Issued on 8/9/04.
Permit Number TE-058381-4. Issued on 9/29/05.

Washington Department of Fish & Wildlife Scientific Collection Permits for varied resident non-ESA-listed species:

Permit # 05-601. Issued on 9/19/05.
Permit # 05-585A. Issued on 8/8/05.
Permit # 05-513. Issued on 4/19/05.
Permit # 04-328. Issued on 8/20/04.
Permit # 03-286a. Issued on 6/11/03.
Permit # 02-345. Issued on 9/30/02.
Permit # 02-296. Issued on 7/15/02.
Permit # 02-038a. Issued on 6/1/02.
Permit # 01-364. Issued on 10/17/01.

National Park Service – Olympic National Park Scientific Research and Collection Permit # OLYM-2004-SCI-0062, issued 10/4/04. ESA-listed species present in Lake Ozette include Lake Ozette Sockeye salmon and the Bull Trout (Salvelinus confluentus).

2. For the above permits, list all mortality events of listed species that have occurred in the last five years.

a. List the ESU/species, life stage, origin, and population where applicable;

Naturally-produced adult Snake River Steelhead (*Oncorhynchus mykiss*).

b. Describe the number and causes of mortalities; and

The unintentional mortality of a single Snake River steelhead occurred during the 2004 sampling season. This mortality was reported in writing on 11/16/04 and in the 2004 Annual Report for NOAA Permit 1386. Briefly, the steelhead died in one of the gill nets which were deployed overnight about 4 miles downstream of Lower Monumental Dam.

c. Describe the measures that have been taken to diminish or eliminate such mortalities, and the effectiveness of those measures.

After the Snake River steelhead mortality incident, gill net soak times were reduced to about 4 hours in order to minimize effects on listed species as per Leslie Schaeffer email 11/23/04. No listed species were encountered during the remaining net sets in 2004. A readjusted gill net soak period from 4 to 6 hours was approved by Leslie Schaeffer (email 8/9/05) to allow for more efficient use of resources while not increasing the chance of mortal take of listed species. No

listed species were encountered in gill nets during the 2005 and early 2006 sampling seasons.

L. **Certification**: You must include the following paragraph, exactly as worded, followed by the applicant or responsible party's signature, name, position title, and date:

"I hereby certify that the foregoing information is complete, true and correct to the best of my knowledge and belief. I understand this information is submitted for the purpose of obtaining a permit under the Endangered Species Act of 1973 (ESA) and regulations promulgated thereunder, and that any false statement may subject me to the criminal penalties of 18 U.S.C. 1001, or to penalties under the ESA."

_____ _____

Signature Date

_____

Name and Position Title (print)

Attach résumés here or submit it/them as a separate document.

M. **Length of Time and Cost to Prepare Application (Optional)**: The public burden of these application instructions is evaluated periodically by the Office of Management and Budget under the Paperwork Reduction Act. Your response will help improve the accuracy of the estimates given for evaluation. You may send comments regarding this estimate or any other aspect of this information collection, including suggestions for reducing this burden, to the Chief, Endangered Species Division, at the address under *Where Do I Send the Application?*

1. Please estimate the length of time, in hours, it took to compile this application.
2. Please estimate the cost, in $US, of compiling this application, excluding the labor hours identified in 1. above. This estimate should include: cost of paper, printing, mailing, photocopying, etc.

Estimated hours: 46.

Estimated costs: $46.

Attachment 2. **Anticipated Annual Take**

ESU Species	Life Stage	Take Activity	Origin	# of Fish Requested	Requested Unintentional Mortality	Research Location	Research Period
CR Chum Salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	50	1/50	Throughout Washington State	January - December
CR Chum Salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	25	1/25	Throughout Washington State	January - December
CR Chum Salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	10	0/10	Throughout Washington State	January - December
CR Chum Salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	10	0/10	Throughout Washington State	January - December
HCS Chum salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	20	1/20	Throughout Washington State	January - December
HCS Chum salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	10	0/10	Throughout Washington State	January - December
HCS Chum salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	4	0/4	Throughout Washington State	January - December
HCS Chum salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	4	0/4	Throughout Washington State	January - December

UCR Spring Chinook Salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	75	2/75	Throughout Washington State	January - December
UCR Spring Chinook Salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	25	1/25	Throughout Washington State	January - December
UCR Spring Chinook Salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	10	0/10	Throughout Washington State	January - December
UCR Spring Chinook Salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	10	0/10	Throughout Washington State	January - December
UCR Steelhead	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	75	1/75	Throughout Washington State	January - December
UCR Steelhead	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	25	1/25	Throughout Washington State	January - December
UCR Steelhead	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	10	0/10	Throughout Washington State	January - December
UCR Steelhead	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	10	0/10	Throughout Washington State	January - December

LCR Chinook Salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	50	1/50	Throughout Washington State	January - December
LCR Chinook Salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	25	1/25	Throughout Washington State	January - December
LCR Chinook Salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	10	0/10	Throughout Washington State	January - December
LCR Chinook Salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	10	0/10	Throughout Washington State	January - December
SnR Steelhead	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	30	1/30	Throughout Washington State	January - December
SnR Steelhead	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	15	0/15	Throughout Washington State	January - December
SnR Steelhead	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	6	0/6	Throughout Washington State	January - December
SnR Steelhead	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	6	0/6	Throughout Washington State	January - December

MCR Steelhead	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	40	1/40	Throughout Washington State	January - December
MCR Steelhead	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	20	1/20	Throughout Washington State	January - December
MCR Steelhead	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	8	0/8	Throughout Washington State	January - December
MCR Steelhead	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	8	0/8	Throughout Washington State	January - December
LCR Steelhead	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	50	1/50	Throughout Washington State	January - December
LCR Steelhead	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	25	1/25	Throughout Washington State	January - December
LCR Steelhead	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	10	0/10	Throughout Washington State	January - December
LCR Steelhead	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	10	0/10	Throughout Washington State	January - December

PS Chinook salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	240	4/240	Throughout Washington State	January - December
PS Chinook salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	50	1/50	Throughout Washington State	January - December
PS Chinook salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	50	1/50	Throughout Washington State	January - December
PS Chinook salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	50	1/50	Throughout Washington State	January - December
SnR S/S Chinook Salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	60	2/60	Throughout Washington State	January - December
SnR S/S Chinook Salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	30	1/30	Throughout Washington State	January - December
SnR S/S Chinook Salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	12	0/12	Throughout Washington State	January - December
SnR S/S Chinook Salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	12	0/12	Throughout Washington State	January - December

SnR Fall Chinook Salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	30	1/30	Throughout Washington State	January - December
SnR Fall Chinook Salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	10	0/10	Throughout Washington State	January - December
SnR Fall Chinook Salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	6	0/6	Throughout Washington State	January - December
SnR Fall Chinook Salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	6	0/6	Throughout Washington State	January - December
Ozette Lake Sockeye Salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	10	1/10	Throughout Washington State	January - December
Ozette Lake Sockeye Salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	5	0/5	Throughout Washington State	January - December
Ozette Lake Sockeye Salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	2	0/2	Throughout Washington State	January - December
Ozette Lake Sockeye Salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	2	0/2	Throughout Washington State	January - December

LCR Coho Salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	20	0/20	Throughout Washington State	January - December
LCR Coho Salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	30	1/30	Throughout Washington State	January - December
LCR Coho Salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	10	0/10	Throughout Washington State	January - December
LCR Coho Salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	30	1/30	Throughout Washington State	January - December
SnR Sockeye Salmon	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	0	0	Throughout Washington State	January - December
SnR Sockeye Salmon	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	0	0	Throughout Washington State	January - December
SnR Sockeye Salmon	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	0	0	Throughout Washington State	January - December
SnR Sockeye Salmon	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	0	0	Throughout Washington State	January - December

PS Steelhead	Juvenile	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	50	1/50	Throughout Washington State	January - December
PS Steelhead	Juvenile	Capture, Handle, Release	Hatchery with clipped adipose fin	25	1/25	Throughout Washington State	January - December
PS Steelhead	Adult	Capture, Handle, Release	Natural & Hatchery with intact adipose fin	10	0/10	Throughout Washington State	January - December
PS Steelhead	Adult	Capture, Handle, Release	Hatchery with clipped adipose fin	10	0/10	Throughout Washington State	January - December

ESU/Species: List each ESU and Species (and populations, if appropriate) you are requesting to take. Include common and scientific names.

Life Stage: Specify fry, juvenile, smolt, pre-spawned adult, post-spawned adult (also note if live or dead when captured). You may combine juvenile (fry, juvenile, smolt) life stages.

Origin: Specify if the individuals are naturally-produced (wild), artificially-propagated (hatchery) with intact adipose fins, or artificially-propagated (hatchery) with clipped adipose fins.

Take Activity: Specify only one of the following for each line:

Collect for transport (including rescue/salvage)
Capture, handle, release
Capture, handle, tag, mark, tissue sample, and/or other invasive procedure, release
(Enter one or more intrusive procedure; you may combine or split.)
Intentional mortality (lethal take, direct mortality)
Removal (e.g., for broodstock collection)
Other take (specify)

Number of Fish Requested: Enter the number of fish that you are requesting for each Take Activity.

Requested Unintentional Mortality: Enter the number of fish that might die as an unintended result of the Take Activity. Enter it as a number OUT OF the number of fish requested for each Take Activity. Use N/A when Take Activity = Intentional mortality.

Research Location: Enter a location for each take. Identify locations that are more specific than whole project. Enter to the 4th field hydrologic unit code (HUC) whenever possible.

Research Period: Enter a range of dates. Identify dates if more specific than project as a whole.